Claims

1. An RNA molecule which can bind to a ligand and comprises the following sequence regions:
   (a) a sequence region maintaining the three-dimensional structure of the RNA molecule; and
   (b) a sequence region for the specific binding of the ligand.

2. The RNA molecule according to claim 1, wherein sequence region (a) comprises the DNA sequence shown in fig. 3 without bars at the margin or a sequence which is related thereto and also permits the maintenance of the three-dimensional structure of the RNA molecule.

3. The RNA molecule according to claim 1 ~~or 2,~~ wherein sequence region (b) comprises the DNA sequence shown in fig. 3 with bars at the margin.

4. The RNA molecule according to ~~any one of claims 1 to 3,~~ claim 1 wherein the ligand is a DNA molecule or a protein.

5. The RNA molecule according to ~~any one of claims 1 to 4,~~ claim 1 which additionally contains a poly(A) sequence at the 3' end.

6. The RNA molecule according to ~~any one of claims 1 to 5~~ claim 1 for the control of gene expression.

7. The DNA sequence which codes for an RNA molecule according to ~~any one of claims 1 to 6~~, claim 1.

8. A gene which comprises the sequence shown in fig. 1 or 2.

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9. A vector which comprises the DNA sequence according to claim 7 ~~or the gene according to claim 8~~.

10. The vector according to claim 9, wherein the vector is a plasmid.

11. The vector according to claim 10, wherein the vector is a viral vector.

12. The vector according to claim 11, which is an RNA virus.

13. The vector according to claim 12, which is a retrovirus.

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14. The host cell, containing the vector according to ~~any one of claims 9 to 13~~ claim 9.

15. The host cell according to claim 14, wherein the host cell is a mammalian cell.

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16. An antibody or a fragment thereof, which bind specifically an RNA molecule according to ~~any one of claims 1 to 6~~ claim 1.

17. The antibody according to claim 16, wherein the antibody is a monoclonal antibody.

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18. An antisense RNA which binds specifically to an RNA molecule according to ~~any one of claims 1 to 6~~ claim 1.

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19. A ribozyme which cleaves specifically an RNA molecule according to ~~any one of claims 1 to 6~~ claim 1.

20. Use of the RNA molecule according to any one of claims 1 to 6, of the vector according to any one of claims 9 to 13, of the antibody or fragment thereof according to claim 16 or 17, of the antisense RNA according to claim 18 or of the ribozyme according to claim 19 for the production of a pharmaceutical preparation for preventing or treating diseases which are connected with a disturbed control of gene expression.

SUB A1

21. Use of the RNA molecule according to any one of claims 1 to 6, of the DNA sequence according to claim 7 or a fragment thereof, of the antibody or fragment thereof according to claim 16 or 17, or of the antisense RNA according to claim 18 or a fragment thereof for the diagnosis of diseases which are connected with a disturbed control of gene expression.

SUBSTITUTE SHEET

The method

A 22. ~~Use~~ according to claim ~~20 or~~ 21, wherein the disease is a tumoral disease or a disease of the central nervous system.

comprising a which

A 23. A non-human mammal ~~whose~~ NINTROX gene is modified by deletion of a homologous sequence and/or insertion of a heterologous sequence.

24. The non-human mammal according to claim 23, wherein the heterologous sequence is a selection marker sequence.

A 25. The non-human mammal according to claim 23 ~~or 24~~, wherein the selection marker sequence conveys resistance to neomycin.

26. A process for the production of a non-human mammal according to any one of claims 23 to 25, characterized by the following steps:

(a) preparation of a DNA fragment, in particular a vector, containing a modified NINTROX gene, the NINTROX gene having been modified by deletion of a homologous sequence and/or insertion of a heterologous sequence, in particular a selectable marker;

(b) preparation of embryonal stem cells from a non-human mammal (preferably mouse);

(c) transformation of the embryonal stem cells from step (b) with the DNA fragment from step (a), the NINTROX gene in the embryonal stem cells being modified by homologous recombination with the DNA fragment from (a),

(d) culturing the cells from step (c),

(e) selection of the cultured cells from step (d) for the absence of the homologous sequence and/or the presence of the heterologous sequence, in particular the selectable marker,

(f) production of chimeric non-human mammals from the cells from step (e) by injection of these cells in mammalian blastocysts (preferably mouse blastocysts), transfer of the blastocysts into false-pregnant female mammals (preferably mouse) and analysis of the resulting offspring for a change of the NINTROX gene.

SUB A2